

**LIST OF CLAIMS / AMENDMENTS**

Claims 4, 14-25, 29, and 39-50 were previously withdrawn.

No claims are amended.

Claims 1-3, 5-13, 26-28, 30-38, and 51-60 are pending as follows:

**1. (previously presented)** A hybrid actuator for actuating a component, comprising:

a first actuator adapted to be coupled to the component and to move the component a first actuation distance;

a second actuator adapted to be coupled to the component and to move the component a second actuation distance; and

a linkage connected to the first actuator and connected to the second actuator, the linkage adapted to combine the first actuation distance and the second actuation distance and to move the component a third actuation distance.

**2. (original)** The hybrid actuator of Claim 1, wherein:  
the first actuator includes a hydraulic piston.

**3. (original)** The hybrid actuator of Claim 1, wherein:  
the second actuator includes a piezo-electric actuator.

**4. (withdrawn)**

1           5.     **(original)**     The hybrid actuator of Claim 3, wherein:  
2           the second actuator includes a piezo-electric cylinder actuator.

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4           6.     **(original)**     The hybrid actuator of Claim 1, wherein:  
5           the linkage includes a pushrod attached between the first actuator and the  
6           second actuator.

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8           7.     **(original)**     The hybrid actuator of Claim 1, wherein:  
9           the linkage includes a mount attached to the second actuator adapted to  
10          hold the first actuator and move the first actuator the second actuation distance.

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12          8.     **(original)**     The hybrid actuator of Claim 1, wherein:  
13          the third actuation distance includes at least one of adding the second  
14          actuation distance to the first actuation distance and subtracting the second  
15          actuation distance from the first actuation distance.

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17          9.     **(original)**     The hybrid actuator of Claim 1, wherein:  
18          the first actuator is adapted to move the component within a first range of  
19          frequencies; and  
20          the second actuator is adapted to move the component within a second  
21          range of frequencies, the second range of frequencies being substantially higher  
22          than the first range of frequencies.

1       **10. (original)**   The hybrid actuator of Claim 9, wherein the first range  
2 of frequencies is less than or equal to approximately 25 cycles per second, and the  
3 second range of frequencies is greater than or equal to approximately 40 cycles per  
4 second.

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6       **11. (original)**   The hybrid actuator of Claim 1, wherein:  
7 the second actuator includes a clevis adapted to join a pushrod to the  
8 component.

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10       **12. (original)**   The hybrid actuator of Claim 1, wherein:  
11 the first actuator is activated at a frequency between 0 and 25 cycles per  
12 second.

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14       **13. (original)**   The hybrid actuator of Claim 1, wherein:  
15 the second actuator is activated at a frequency between 40 and 200 cycles  
16 per second.

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18       **14-25. (withdrawn)**  
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1       **26. (previously presented)** A system for suppressing undesired  
2 movement of a component, comprising:

3           a least one motion sensor adapted to monitor the component;

4           a processor linked to the at least one motion sensor, the processor adapted  
5 to accept an input from the at least one motion sensor, and to control a plurality of  
6 actuators responsive to the input from the at least one motion sensor;

7           a first actuator controlled by the processor, the first actuator connected to  
8 the component, the first actuator adapted to move a first actuation distance at a  
9 first range of frequencies;

10          a second actuator controlled by the processor, the second actuator  
11 connected to the component, the second actuator adapted to move a second  
12 actuation distance at a second range of frequencies; and

13          a linkage connected to the first actuator and connected to the second  
14 actuator, the linkage adapted to combine the first actuation distance and the second  
15 actuation distance thereby moving the component a third actuation distance.

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17       **27. (original)** The system of Claim 26, wherein:  
18 the first actuator includes a hydraulic piston.

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20       **28. (original)** The system of Claim 26, wherein:  
21 the second actuator includes a piezo-electric actuator.

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23       **29. (withdrawn)**  
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1       **30. (original)**   The system of Claim 28, wherein:  
2       the second actuator includes a piezo-electric cylinder actuator.

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4       **31. (original)**   The system of Claim 26, wherein:  
5       the linkage includes a pushrod attached between the first actuator and the  
6       second actuator.

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8       **32. (original)**   The system of Claim 26, wherein:  
9       the linkage includes a mount attached to the second actuator adapted to  
10      hold the first actuator and move the first actuator the second actuation distance.

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12      **33. (original)**   The system of Claim 26, wherein:  
13      the third actuation distance includes at least one of adding the second  
14      actuation distance to the first actuation distance and subtracting the second  
15      actuation distance from the first actuation distance.

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17      **34. (previously presented)**   The system of Claim 26, wherein:  
18      the component includes at least one of an aircraft rudder, an aircraft  
19      stabilizer, and an aircraft control surface.

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21      **35. (original)**   The system of Claim 26, wherein:  
22      the first actuator is activated at a frequency between 0 and 25 cycles per  
23      second.

1           **36. (original)**   The system of Claim 26, wherein:

2           the second actuator is activated at a frequency between 40 and 200 cycles  
3 per second.

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5           **37. (previously presented)**   The system of Claim 26, wherein the at  
6 least one motion sensor includes an accelerometer.

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8           **38. (original)**   The system of Claim 26, wherein the second range of  
9 frequencies is substantially higher than the first range of frequencies.

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11           **39-50. (withdrawn)**  
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1           **51. (previously presented)** An aircraft with hybrid motion  
2 suppression, comprising:

3           a fuselage including an appendage;

4           at least one motion sensor adapted to sense motion of the appendage;

5           a processor linked to the at least one motion sensor, the processor adapted  
6 to accept an input from the at least one motion sensor, and to provide at least one  
7 output signal responsive to the input from the at least one motion sensor;

8           a first actuator controlled by the processor, the first actuator connected to  
9 the appendage, the first actuator adapted to receive the at least one output signal  
10 and to move a first actuation distance to oppose the undesired movement at a first  
11 range of frequencies;

12           a second actuator controlled by the processor, the second actuator  
13 connected to the appendage, the second actuator adapted to receive the at least one  
14 output signal and to move a second actuation distance to oppose the undesired  
15 movement at a second range of frequencies; and

16           a linkage connected to the first actuator and connected to the second  
17 actuator, the linkage adapted to combine the first actuation distance and the second  
18 actuation distance thereby moving at least a portion of the appendage a third  
19 actuation distance in opposition to the undesired movement.

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21           **52. (original)** The aircraft of Claim 51, wherein:

22           the first actuator includes a hydraulic piston.  
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1       **53. (original)**   The aircraft of Claim 51, wherein:  
2       the second actuator includes a piezo-electric actuator.

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4       **54. (original)**   The aircraft of Claim 51, wherein:  
5       the linkage includes a pushrod attached between the first actuator and the  
6       second actuator.

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8       **55. (original)**   The aircraft of Claim 51, wherein:  
9       the linkage includes a mount attached to the second actuator adapted to  
10      hold the first actuator and move the first actuator the second actuation distance.

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12      **56. (original)**   The aircraft of Claim 51, wherein:  
13      the third actuation distance includes at least one of adding the second  
14      actuation distance to the first actuation distance and subtracting the second  
15      actuation distance from the first actuation distance.

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17      **57. (original)**   The aircraft of Claim 51, wherein:  
18      the first actuator is activated at a frequency between 0 and 25 cycles per  
19      second.

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21      **58. (original)**   The aircraft of Claim 51, wherein:  
22      the second actuator is activated at a frequency between 40 and 200 cycles  
23      per second.



1       **59. (previously presented)**   The aircraft of Claim 51, wherein:  
2       the at least one motion sensor includes an accelerometer.

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4       **60. (original)**   The aircraft of Claim 51, wherein:  
5       the portion of the appendage includes a control surface movably included in  
6       the appendage.  
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